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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 20040224

Application Number: 09/918,760
Filing Date: August 01, 2001
Appellant(s): MOORE ET AL.

James A. Oliff (Registration No. 27,075), Joel S. Armstrong (Registration No. 36,430) and Linda
M. Saltiel (Registration No. 51,122)
For Appellant

EXAMINER'S ANSWER

MAILED

MAR 11 2004

GROUP 2800

This is in response to the appeal brief filed 12/24/2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

This appeal involves claims 1-24.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-8, 9-15 and 24, and 16-23 stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(5) and (c)(6).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,149,217	Narita	09/22/1992
6,312,177	Nureki	11/06/2001
4,519,700	Barker et al.	05/28/1985

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-12 and 14-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Narita (US 0055149217).

Narita discloses a system comprising:

- A drive motor (FIG.14, step motor 54) that can rotate in increments, with regard to claims 1, 9, 16, 20 and 24;
- A drive train (FIG.14, gear train 55) driven by the drive motor, with regard to claims 1, 9, 16, 20 and 24;
- At least one substrate transport mechanism (FIG.14, medium feed roller 57 and shaft 56) connected to the drive train and driven by the drive motor therethrough with regard to claims 1, 9, 16, 20 and 24;
- A medium feed mechanism, which plays the role of the substrate advancer and the substrate final advancer, in communication with the drive motor emitting control signals to the drive motor that cause the substrate to move to a point short of an intended destination (column 2, lines 30-37) or to continue to the intended destination (column 2, lines 48-57), with regard to claims 1, 9, 16, 20 and 24;

- The means for stopping (the clutch mechanism) operates in response to a means for sensing substrate position (medium sensor) (column 7, lines 63-68 and column 8, lines 1-23), with regard to claim 2;
- The means for finally advancing comprises means for incrementally advancing the substrate (column 1, lines 7-11), with regard to claim 3;
- The drive motor is a position-controlled servo motor (column 5, lines 1-25), with regard to claims 4 and 10;
- The drive motor is a stepper motor (column 1, line 38), with regard to claims 5, 11 and 21;
- The means for finally advancing operates the stepper motor in full steps, in fractions of steps, and in microsteps (column 1, lines 49-54), with regard to claims 6, 7, 8, 21, 22 and 23;
- The signals from the medium feed mechanism, which plays the role of the substrate advancer, cause the drive motor to stop the substrate a predetermined number of increments from the intended destination (column 2, lines 30-37), with regard to claims 12 and 18;
- The signals from the medium feed mechanism, which plays the role of the substrate final advancer, cause the drive motor to advance by the predetermined number of increments (column 2, lines 48-57), with regard to claims 14 and 19;
- A medium sensor 12 (FIG.4) is implemented in this medium feed mechanism. As an inherent feature, it is somehow sending a signal to the medium feed mechanism, which plays the role of the substrate final advancer, to stop the drive

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motor when it detects that the substrate has arrived at the intended destination,
(column 4, lines 61-67), with regard to claims 15 and 17;

The method claims 6-8 and 16-23 are clearly rejected based upon the rejections of the system claims above of the system since the claimed method steps are met by the normal and intended use of the system of Narita.

Claims 1, 3-12, 14, 16 and 18-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Nureki (US 006312177 B1).

Nureki teaches a system comprising:

- A drive motor (FIG.4, step motor 401) that can rotate in increments, with regard to claims 1, 9, 16, 20 and 24;
- A drive train (FIG.4, gear train 402 and 403) driven by the drive motor, with regard to claims 1, 9, 16, 20 and 24;
- At least one substrate transport mechanism (FIG.4, platen roller 57 and shaft 56) connected to the drive train and driven by the drive motor therethrough with regard to claims 1, 9, 16, 20 and 24;
- A motor control means, which plays the role of the substrate advancer and the substrate final advancer, in communication with the drive motor emitting control signals to the drive motor that cause the substrate to move to a point short of an intended destination (column 4, lines 32-35) or to continue to the intended destination (column 4, lines 35-38), with regard to claims 1, 9, 16, 20 and 24;
- The means for finally advancing comprises means for incrementally advancing the substrate (column 1, lines 10-12), with regard to claim 3;

- The drive motor is a position-controlled servo motor (column 1, lines 24-33 and FIG.2), with regard to claims 4 and 10;
- The drive motor is a stepper motor (column 1, line 15), with regard to claims 5, 11 and 21;
- The means for finally advancing operates the stepper motor in full steps, in fractions of steps, and in microsteps (column 3, lines 1-8), with regard to claims 6, 7, 8, 21, 22 and 23;
- The signals from the paper advance mechanism, which plays the role of the substrate advancer, cause the drive motor to stop the substrate a predetermined number of increments from the intended destination (column 1, lines 24-57), with regard to claims 12 and 18;
- The signals from the paper advance mechanism, which plays the role of the substrate final advancer, cause the drive motor to advance by the predetermined number of increments (column 2, lines 25-33), with regard to claims 14 and 19;

The method claims 6-8 and 16-23 are clearly rejected based upon the rejections of the system claims above of the system since the claimed method steps are met by the normal and intended use of the system of Nureki.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Narita.

Narita teaches all that is claimed except that Narita does not specifically teach a backlash error in his system, but it is clear that at least under certain circumstances the backlash error must be smaller than the predetermined number of increments so that his system can function properly. Therefore, it would have been obvious to one having ordinary skill in the art at the

time the invention was made that the predetermined number of increments is greater than a number of increments representing a total possible backlash error in the drive train since this is what would be expected during the normal and intended use of the system of Narita.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nureki

Nureki teaches all that is claimed except that Nureki does not specifically teach a backlash error in his system, but it is clear that at least under certain circumstances the backlash error must be smaller than the predetermined number of increments so that his system can function properly. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the predetermined number of increments is greater than a number of increments representing a total possible backlash error in the drive train since this is what would be expected during the normal and intended use of the system of Nureki.

Claims 2, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nureki in view of Barker et al. (4,519,700).

Nureki teaches all that is claimed, except for the followings:

- A means for sensing substrate position with regard to claims 2, 15 and 17

However, Barker et al teaches that a system comprising:

- A means for sensing substrate position (FIG.1, paper sensor 32 and column 6, lines 53-61).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Nureki to incorporate the teaching of a means for sensing substrate position taught by Barker et al. since Barker et al. teaches that such an

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arrangement is beneficial to control the feeding of the printing medium based on the signal from the optical sensor, so it will allow a printer to print images with high precision.

(11) Response to Argument

Appellants' arguments directed to the rejection under 35 U.S.C. 102(b) as being anticipated by Narita are not deemed to be persuasive as follows.

In response to appellant's argument (Page 4, 2nd and last paragraphs, and page 5, 2nd paragraph) that Narita fails to show certain features of applicant's invention, it is noted that the features upon which appellant relies (i.e., final intended position) are not further defined in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. As disclosed in column 2, lines 34-37, Narita teaches "the medium feed roller can be stopped ***at any selected position*** by the clutch mechanism". A selected position can be short of a position of which said position is defined as "a final intended position" as claimed.

In response to appellant's argument (Page 5, 4th paragraph) that Narita fails to show certain features of applicant's invention, it is noted that the features upon which appellant relies (i.e., reducing backlash) fails "to give life, meaning and vitality" to the claims 1, 9, 16 and 24. It is noted, "[A] claim preamble has the import that the claim as a whole suggests for it." *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). "If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51

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USPQ2d 1161, 1165-66 (Fed. Cir. 1999): In the present claims, the preamble does not give life, meaning and vitality to the claims since the respective bodies of the claims define complete apparatuses and method which do not rely on the preambles for completeness.

Furthermore, it should be noted that whether the backlash reduction takes place or not, the invention as claimed is having means for stopping advance of the substrate short of a final intended position and means for finally advancing the substrate which is satisfied by structural limitation taught by Narita.

On the same page 5 in the last paragraph, the appellant agreed that Narita describes a device that can stop the substrate. In response to appellant's argument "nowhere does Narita disclose means that stops the substrate short of a particular point", the examiner disagrees. As disclosed in column 2, lines 34-37, Narita teaches "the medium feed roller can be stopped *at any selected position* by the clutch mechanism" when an electric current is supplied to the electromagnet clutch to meet the limitation as claimed.

In response to appellant's argument "nowhere does Narita disclose means that then finally advances, for example, by incrementally moving the paper in much smaller steps, to the final desired points", the examiner disagrees. As disclosed in column 2, lines 54-57, Narita teaches "the feed roller can be *accurately and incrementally rotated in predetermined incremental steps due to the intermittent operation of the electromagnet clutch* of the medium feed mechanism" when an electric current is not supplied to the electromagnet clutch, hence meeting the limitation as claimed.

Appellant's argument with respect to claim 16 and dependent claims (Page 6, last paragraph) has been traversed above.

In response to appellant's argument of claims 9, 24 and dependent claims (Page 7, 1st paragraph) that "Narita also lacks a substrate advancer that emits signals to stop the substrate short of a final destination and lacks a substrate final advancer that sends a signal to advance the substrate to an intended final destination", the examiner disagrees. As disclosed in column 2, lines 7-57, Narita discloses a medium feed mechanism, which plays the role of the substrate advancer and the substrate final advancer as claimed, is controlled by a controlling means for controlling the supply of an electric current to the electromagnet clutch. Thus, the controlling means must send a signal to turn on or to turn off the electric current to the electromagnet clutch, which controls the clutch mechanism in the medium feed mechanism. As a result, "the medium feed roller can be stopped *at any selected position* by the clutch mechanism" (column 2, lines 34-37) corresponding to "cause the substrate to move to a point short of an intended destination" as claimed, or "the feed roller can be *accurately and incrementally rotated in predetermined incremental steps due to the intermittent operation of the electromagnet clutch* of the medium feed mechanism" (column 2, lines 54-57) corresponding to "cause the substrate to continue to the intended destination" as claimed, hence meeting the limitation as claimed in the mentioned independent claims right above.

Appellant's arguments directed to the rejection under 35 U.S.C. 102(e) as being anticipated by Nureki are not deemed to be persuasive as follows.

In response to appellant's argument on page 8, 1st paragraph "Nureki is not disclosing means for advancing a substrate and means for finally advancing a substrate", the examiner disagrees. As disclosed in column 1, line 67 to column 2, line 1, Nureki teaches "an object of

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the invention is to provide a line printer”, therefore, it must have means for advancing a substrate and means for finally advancing a substrate.

In response to appellant’s argument (Page 8, 3rd paragraph) that Nureki fails to show certain features of applicant’s invention, it is noted that the features upon which appellant relies (i.e., final intended position) are not further defined in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. As disclosed in column 4, lines 32-34, Nureki discloses “means for performing a stop printing operation to stop printing by turning off the motor after driving the motor in a reverse direction”. The stopped position can be short of a position of which said position is defined as “a final intended position” as claimed.

In response to appellant’s argument on page 8, 4th paragraph, the examiner cited column 1, lines 10-12 not column 3, lines 10-12 as quoted by the appellant. The disclosure in column 1, lines 10-12, “ a line printer for simultaneously printing characters, etc. according to a print signal input from a host, feeding print paper in units of line”, reads on the limitations as claimed, such as “advancing the substrate” corresponding to “feeding print paper” and “incrementally advancing the substrate” corresponding to “in units of line”.

In response to appellant’s argument on page 8, 5th paragraph “Nureki also lacks any means for finally advancing the substrate as required in claim 1”, the examiner disagrees. As disclosed in column 4, lines 35-37, Nureki teaches “means for performing a start printing operation to start printing by driving the motor in a forward direction”, therefore, it must have a means for finally advancing a substrate to any intended position of which said position is defined as “a final intended position” as claimed.

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Appellant's argument with respect to claim 16 and dependent claims (Page 9, 2nd paragraph) has been traversed above.

Appellant's argument with respect to claims 9, 24 and dependent claims (Page 9, 3rd paragraph) has been traversed above.

Appellant's argument with respect to claims 2, 13, 15 and 17 (Pages 9 and 10), "nothing in Narita, Nureki and Barker, alone or in combination, remedies the deficiencies of Narita and Nureki discussed above with respect to claims 1, 9, 16 and 24" has been traversed above.


For the above reasons, it is believed that the rejections should be sustained.

An appeal conference was held on February 20, 2004 with N. Le and O. Chaudhuri.


Respectfully submitted,

Hoai-An D. Nguyen
Examiner
Art Unit 2858
HADN

HADN
February 27, 2004

Conferees
Nancy Le
Olik Chaudhuri 

Patent Documentation Center
Xerox Corporation
Xerox Square 20th Floor
100 Clinton Ave. S.
Rochester, NY 14644


N. Le
Supervisory Patent Examiner
Technology Center 2800